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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/740,201
Filing Date: December 18, 2000
Appellant(s): O'MEARA ET AL.

William M. Lee, Jr.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed August 9, 2007 appealing from the Office action mailed June 6, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 2002/0065700	Powell et al	05-2002
USPN 5,913,201	Kocur	06-1999
USPN 5,943,652	Sisley et al	08-1999
USPN 6,587,851	Ditcharo et al	07-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-17, 22-25, 27, and 30-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Powell et al (US 2002/0065700), in view of Kocur (USPN 5,913,201).

As per claim 1, Powell et al disclose a method of allocating a location-related order to one of a plurality of mobile agents (processing work assignments to a mobile workforce ¶ 0033), comprising the steps of a) maintaining a current order record identifying a first location and first time at which each agent is expected to become free to fulfill a new order (workforce member scheduled examined and periods of availability and slack time are identified, ¶ 0033); b) maintaining a prioritized listing of locations (consideration of workforce members geographic location and associate a geographic block to minimize travel time, ¶ 0044), including both scheduled locations which an agent is currently due to visit and unscheduled locations which said agent is not currently due to visit (i.e., pooled queue 20 of pooled work orders associated with geographic location, listed according to priority of the work order, ¶ 0044, wherein inserting pooled work orders 36 into the workforce member schedule, create a revised schedule or route 40, ¶ 0055); c) receiving said location-based order and recording the location and time at which said order is to be fulfilled (pooled work order associated with geographic block,¶ 0044); d) determining from said prioritized listing of locations a suitable agent to fulfill said order (workforce member with slack time or periods of availability in the geographic block, ¶ 0044); and e) allocating said order to said identified agent (pooled work orders associated with the geographic block are inserted into workforce member's schedule who has slack, ¶ 0044). Powell et al does not explicitly disclose locations in said listing being prioritized to rank both the scheduled and unscheduled locations for said agent according to availability of the agent to reach each location after said

first time, said availability having been calculated for each location irrespective of whether or not said agent is currently due to visit a particular location in said listing. Kocur discloses an initial route (i.e., scheduled locations) created for each worker based utilizing a distance and travel time minimizing technique (column 12, lines 31-37), which results in ordering the work-projects in deadline order (i.e., rank order of importance), wherein all pairs of work-projects in the route are then swapped and examined for improvements, i.e., both scheduled and unscheduled locations are examined and ranked in order to determine improvement (column 15, lines 9-17). Both Powell et al and Kocur are concerned with efficient assignment of mobile workers, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include locations in said listing being prioritized to rank both the scheduled and unscheduled locations for said agent in Powell et al, as seen in Kocur, thus improving the efficiency and robustness of the Powell et al system in determining worker schedules.

As per claim 2, Powell et al disclose step a) comprises maintaining for each agent an individual current order file relating only to that agent (individual work force member schedule, ¶ 0033).

As per claim 3, Powell et al disclose step a) comprises maintaining a combined current order file relating to a plurality of agents, with said first location and first time identified for each such agent (schedule created for the work force as a whole, ¶ 0033).

As per claim 4, Powell et al disclose step b) comprises maintaining for each agent an individual prioritized location listing relating only to that agent (workforce member geographic location and associated geographic block, ¶ 0044).

As per claim 5, Powell et al disclose step b) comprises maintaining a combined prioritized location listing relating to a plurality of agents, with each location being prioritized for one or more agents according to the ability of the or each such agent to reach each location after said first time relating to the agent (i.e., each workforce member's geographic location and associated geographic block is examined in order to minimize travel time, ¶ 0044).

As per claim 6, Powell et al disclose the step of updating the current order record for said identified agent with a new first location and first time at which said agent is expected to become free after fulfilling said order (i.e., process is iterative until all slack time is filled, ¶ 0044).

As per claim 7, Powell et al disclose said step of allocating said order comprises i) offering said order to said agent (i.e., inserting work order into workforce member's schedule); and ii) receiving confirmation of acceptance of the order from the agent (i.e., confirmation is assumed upon delivery of new schedule to workforce member, wherein scheduling assignments are based upon worker preference, ¶ 0040).

As per claim 8, Powell et al disclose said current order record identifies locations and times relating to all current orders assigned to said agent (i.e., geographic location and slack time or availability).

As per claim 9, Powell et al disclose said listing of locations identifies the priority of each location with a time at which the agent is expected to be able to reach said location (i.e., minimize travel time between consecutive work orders, ¶ 0044).

As per claim 10, Powell et al disclose said listing of locations identifies the priority of each location with a priority identifier calculated from the distance between each such location and said first location, and the time between the current time and said first time (i.e., minimization of travel time based upon the geographic block of the work order, ¶ 0043).

As per claim 11, Powell et al disclose said distance is a true geographical distance (i.e., geographical area 30 represent true distances, figure 2).

As per claim 12, Powell et al disclose said distance is a distance calculated in a non-linear representation of an area including said locations (i.e., area 30 parsed into grid blocks 31, figure 2).

As per claim 13, Powell et al disclose said representation is selected from a grid of cells to which locations are mapped, a set of groups of locations, and a mesh of elements to which locations are mapped (grid blocks 31).

As per claim 14, Powell et al disclose said locations are identified as cells within a grid to which locations are mapped (grid blocks 31).

As per claim 15, Powell et al disclose said locations are identified as groups of locations within a set of such groups (i.e., groups of geographic blocks).

As per claim 16, Powell et al disclose said locations are identified as elements within a mesh of elements to which locations are mapped (i.e., circle shapes 36

represent pooled work locations, and diamonds 34 represent service orders, figure 2).

As per claim 17, Powell et al disclose updating the prioritized listing for said identified agent when said order has been allocated, to take account of said new first location and new first time (i.e., iterative process updates workforce members schedule and looks for additional slack time or availability, ¶ 0044).

As per claim 22, Powell et al disclose said current order file further includes details of an advance order, including a second location and a second time after said first time, at which said advance order is to be fulfilled, and wherein step d) includes the step of determining whether the agent is expected to be able to finish said new location-based order with sufficient time to fulfill said advance order (i.e., iterative process updates workforce members schedule and looks for additional slack time or availability in order to add new work orders, ¶ 0044).

Claim 23 is rejected based upon the same rationale as claim 17 (which depends from claim 6 and claim 1), since it contains the same limitations therein.

Claim 24 is rejected based upon the rejection of claim 1, since it is the system claim corresponding to the method claim.

As per claim 25, Powell et al disclose said input interface comprises an operator interface for an operator to input details received from an ordering party (user interface 102, ¶ 0067).

As per claim 27, Powell et al disclose a map database correlating real geographical locations with location identifiers for use in identifying locations in said

current orders file and said listing (i.e., computer program 92 must include a map database in order to determine minimal travel time based upon geographic locations).

Claims 30-34 are rejected based upon the same rationale as the rejections of claims 1, 8, 22, 2, and 4, respectively, since they are the profile claims relating to the method claims, containing the same limitations therein.

Claim 35 is rejected based upon the rejection of claim 1, since it is the program product claim, corresponding to the method claim.

Claim 36 is rejected based upon the rejection of claim 1, since it is the communication network claim, corresponding to the method claim.

Claims 18-20, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Powell et al, in view of Kocur (USPN 5,913,201), as applied to claims 1 and 24 above, in further view of Sisley et al (USPN 5,943,652).

As per claims 18-20, Powell et al does not disclose said first time is calculated from a journey time file which records expected journey times between locations, and said first time is input by an operator based on an expected journey time, wherein the operator is the agent to which the current order record relates. Sisley et al disclose the travel time being specified by the system user and stored in a travel time file, wherein the system user could be the technician (column 26, lines 53-55). Both Powell and Sisley are concerned with effective workforce scheduling, therefore it would have been obvious to one having ordinary skill in the art at the time the

invention was made to include a travel time file in the Powell system, thereby making the system more efficient in determining repetitive travel times.

As per claim 26, Powell et al does not disclose said input interface is selected from a web server hosting a user interface via which ordering parties can input order details, a Wireless Application Protocol (WAP) server hosting a user interface via which ordering parties can input order details, an Interactive Voice Response (IVR) unit via which a user can input order details and a Short Messaging Service (SMS) gateway for receiving SMS messages containing order details. Sisley et al disclose a service management system and one or more interactive user interfaces 18 for communication between the scheduling system and the users (column 5, lines 35-41). Both Powell and Sisley are concerned with effective workforce scheduling, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a interactive communication system in the Powell system, thereby making the system more efficient in communicating customer needs to the workforce members.

Claim 28 is rejected based upon the rejection of claim 18, since it is the system claim corresponding to the method claim.

Claims 21 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Powell et al, in view of Kocur (USPN 5,913,201), as applied to claims 1 and 24 above, in further view of Ditcharo et al (USPN 6,587,851).

As per claim 21, Powell et al does not disclose the step of maintaining said current order record includes providing access to an agent to said current order record to edit the details recorded therein. Ditcharo et al disclose access unit 204 including provisions that allow technicians to retrieve information and run tests (column 5, lines 16-24). Both Powell and Ditcharo are concerned with effective workforce scheduling, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include workforce member access to records in Powell, as an efficient means of sharing information within the system, thereby improving overall communications.

Claim 29 is rejected based upon the rejection of claim 21, since it is the system claim corresponding to the method claim.

(10) Response to Argument

In the Appeal Brief, Appellant argues that 1) with respect to claim 1, Powell et al fails to disclose maintaining a prioritized listing of locations, including both scheduled locations which an agent is currently due to visit and unscheduled locations which said agent is not currently due to visit, 2) with respect to claim 1, Kocur does not disclose or suggest calculating the availability of a given agent to reach locations irrespective of whether or not that agent is due to visit such a location, since Kocur makes no use of any unscheduled locations, 3) it is not clear what argument has been made to support the contention that the skilled person would combine the two references, 4) with respect to claims 4 and 34, the individualized prioritized listing

cannot be the pooled queue 20, since it contains no indication of where a workforce member might be located 5) with respect to claim 5, the pooled queue 20 cannot disclose the feature of a combined prioritized location listing relating to a plurality of agents, with each location being prioritized for one or more agents according to the ability of the or each such agent to reach each location after said first time relating to the agent, 6) with respect to claim 7, the rejection only mentions delivery of a new schedule to a worker, not the offer of an individual order, which the agent can accept or refuse, 7) with respect to claims 9-13, the Examiner has found reference to certain geographic features of Powell which are not related to the pooled queue and thus by extension cannot be part of the claimed prioritized listing according to the Examiner's reasoning, and 8) with respect to claims 21 and 29, Ditcharo et al does not allow agents to access their current order record.

With respect to Argument 1, the Examiner respectfully disagrees. Powell et al disclose at each point throughout a workforce member's daily schedule, consideration of workforce members geographic location, and association of a geographic block to minimize travel time (¶ 0044), thus allowing travel time between consecutive work assignments to be minimized, and indeed disclosing maintaining a prioritized listing of locations. In addition, Powell et al disclose a pooled queue 20 of work orders associated with geographic location, listed according to priority of the work order (¶ 0044), wherein inserting pooled work orders 36 into the workforce member schedule, create a revised schedule or route 40 (¶ 0055), thus indeed including both scheduled locations which an agent is currently due to visit and

unscheduled locations which said agent is not currently due to visit. In other words, the calculation of revised schedule or route 40, based upon minimization of travel time, which includes previously unscheduled pooled work requests, is indeed a prioritized listing of locations, including both scheduled locations which an agent is currently due to visit and unscheduled locations which said agent is not currently due to visit.

With respect to Argument 2, the Examiner respectfully disagrees. Kocur discloses assigning specific work projects to a worker utilizing a distance and travel time minimizing technique (column 12, lines 31-37), which results in flows from workers to work-projects that minimize the distance of the work-projects assigned to the worker's preferred work location (column 14, lines 12-16). As such, the flows from workers to work-projects, as seen in Kocur, indeed discloses calculating the availability of a given agent to reach locations irrespective of whether or not that agent is due to visit such a location, wherein

With respect to Argument 3, the Examiner respectfully disagrees. As discussed in the *KSR International Co. v. Teleflex Inc. et al.*, 550 U.S. ____(2007), "[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit. See *In re Kahn*, 441 F. 3d 977, 988 (CA Fed.

2006) ('[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness'). As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ."

With respect to Argument 4, the Examiner respectfully disagrees. Powell et al disclose at each point throughout a workforce member's daily schedule, consideration of each workforce member's geographic location, and associate a geographic block with that location (¶ 0044), thus indeed maintaining for each agent an individual prioritized location listing.

With respect to Argument 5, the Examiner respectfully disagrees. Powell et al disclose slack time or periods of availability are filled from the pooled queue 20, wherein at each point throughout a workforce member's schedule, each workforce member's geographic location and associated geographic block is examined in order to minimize travel time between consecutive work assignments (¶ 0044). As such, Powell et al indeed discloses a combined prioritized location listing relating to a plurality of agents, with each location being prioritized for one or more agents according to the ability of the or each such agent to reach each location after said first time relating to the agent.

With respect to Argument 6, the Examiner respectfully disagrees. First, the Examiner notes, as discussed by Appellant, that there was a typographically error in the Final rejection of claim 7, mailed June 6, 2006, which indicated that "[a]s per claim 7, Powell et al does not disclose..." Instead, it should have read that "Powell et al disclose..." As such, Powell et al disclose the scheduling process reflecting time constraints imposed by several factors, including employee preferences (¶ 0038). In addition, optimization routines are incorporated into the rules to create and revise schedules, wherein the input includes employee preferences (¶ 0040). As such, creation and revision of the work assignments and schedules necessarily include employee preferences and acceptance of the assignments and schedules.

With respect to Argument 7, the Examiner respectfully disagrees. The rejections of claims 9-13 include the geographical are 30 parsed into smaller areas, grid blocks 31 (see Powell et al, ¶ 0055), wherein the method of Powell et al inserts pooled work orders into the workforce member schedules, creating a revised schedule or route 40 (¶ 0055). As such, and contrary to Appellant's argument, the geographic features of Powell are indeed related to the pooled queue.

With respect to Argument 8, the Examiner respectfully disagrees. Ditcharo et al disclose each technician assigned an access unit 204 to communicate with the dispatch unit 202 (column 4, lines 62-66), wherein the dispatch unit sends information regarding work assignments to the access unit 204 (column 5, lines 2-5). Moreover, technicians use the access unit to retrieve assignment information, wherein the access unit 204 is equipped with a display and an input portion. As

such, Ditcharo et al indeed discloses allowing agents to access their current order record.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Andre Boyce
November 12, 2007

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Art Unit 3623